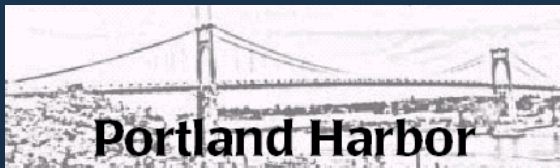




Portland Harbor Superfund Site

Project Overview

April 15, 2008

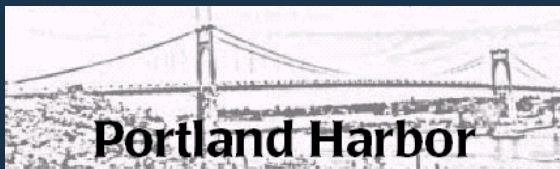




Superfund – CERCLA

Comprehensive Environmental Response Compensation and Liability Act

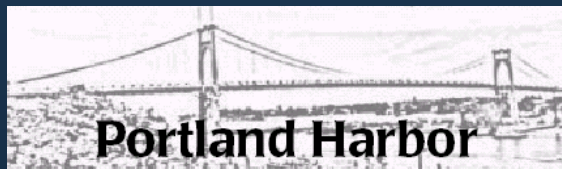
- enacted by congress in 1980





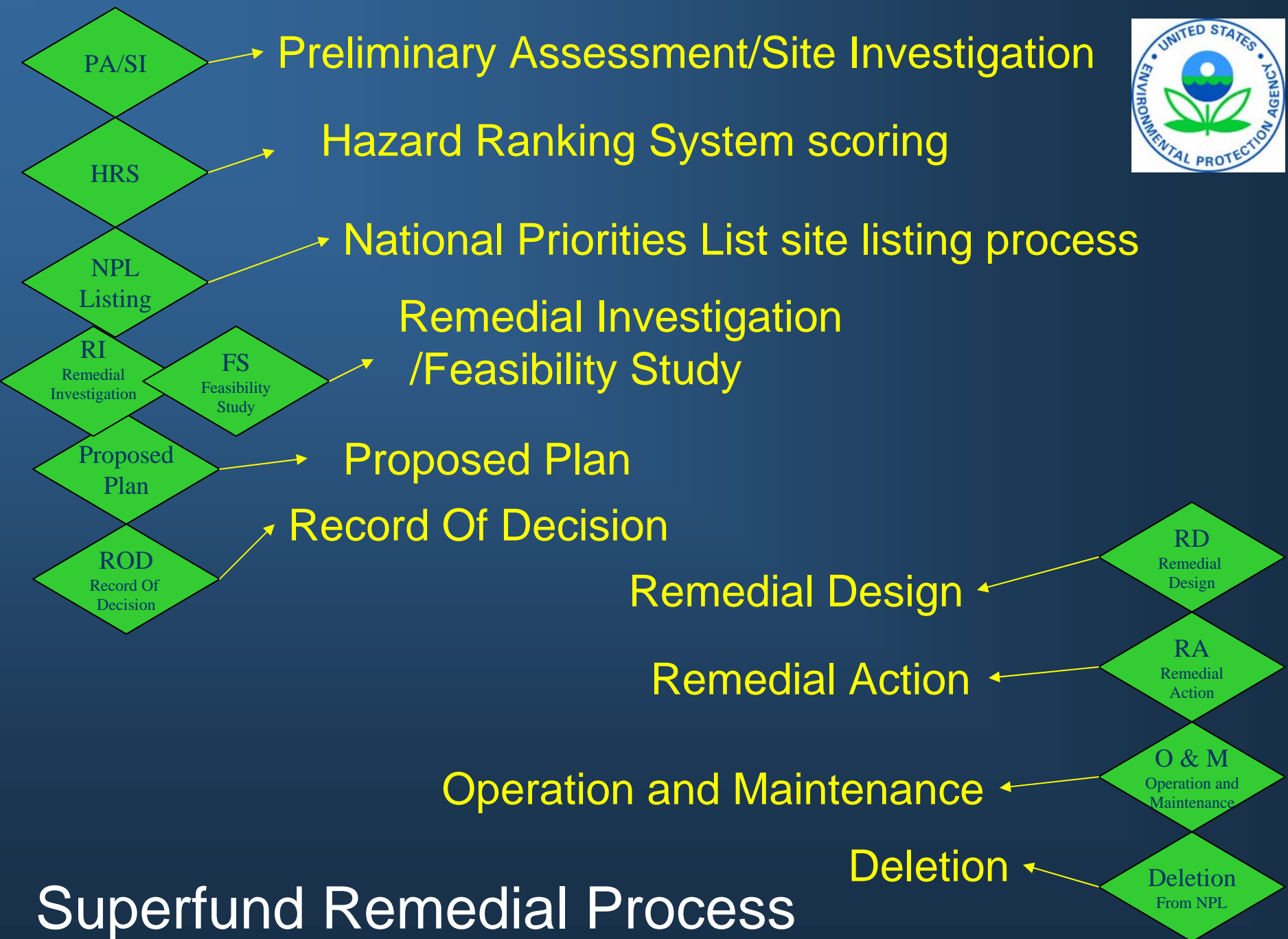
Superfund

- Cleanup the nation's uncontrolled hazardous waste sites
- Chemical and petroleum industry tax for a trust fund to cleanup abandoned or uncontrolled sites
- Federal authority to respond directly
- Provided for liability of parties responsible for releases at sites.



Superfund Programs

- Removal Program
- Remedial Program
- Emergency response
- Long-term cleanups
- Spills, direct threats
- National Priorities List
- Early Actions

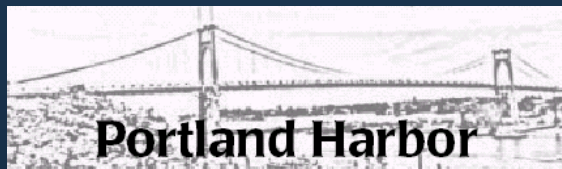


Superfund Remedial Process



Natural Resource Damages

- CERCLA provides authority for assessment and restoration of natural resources injured by a hazardous substance release or response
- Protection of natural resources – held in trust for the public – federal, state and tribal responsibility





Background

- Lower Willamette River from Swan Island to the southern tip of Sauvie Island
- Heavily industrialized for past 100 years
- Many types of industries:
 - Ship repair and maintenance
 - Pesticide manufacturing
 - Wood treating
 - Bulk petroleum storage





Lower Willamette River Fish

- 39 species
- 3 runs of chinook salmon
- 2 runs of steelhead
- Individual runs of coho and sockeye salmon
- Pacific lamprey
- Some are endangered species



1888



2001



1921 | Guilds Lake Fill & Swan Island Before Airport



Portland Harbor Superfund Site – bank fishing



Project Milestones

- 1997 - Site Investigation
- December 2000 - NPL Listing
- September 2001 - AOC signed with LWG
- 2002 – Round 1 sampling
- 2004 – Remedial Investigation Feasibility Study (RI/FS Work Plan) and Field Sampling Plan Development
- 2004/5 – Round 2 sampling

1997 Sediment Investigation

DEQ and EPA investigation identified elevated levels of contaminants in shallow near-shore sediments in the Lower Willamette River (RM 3.5-9.2)

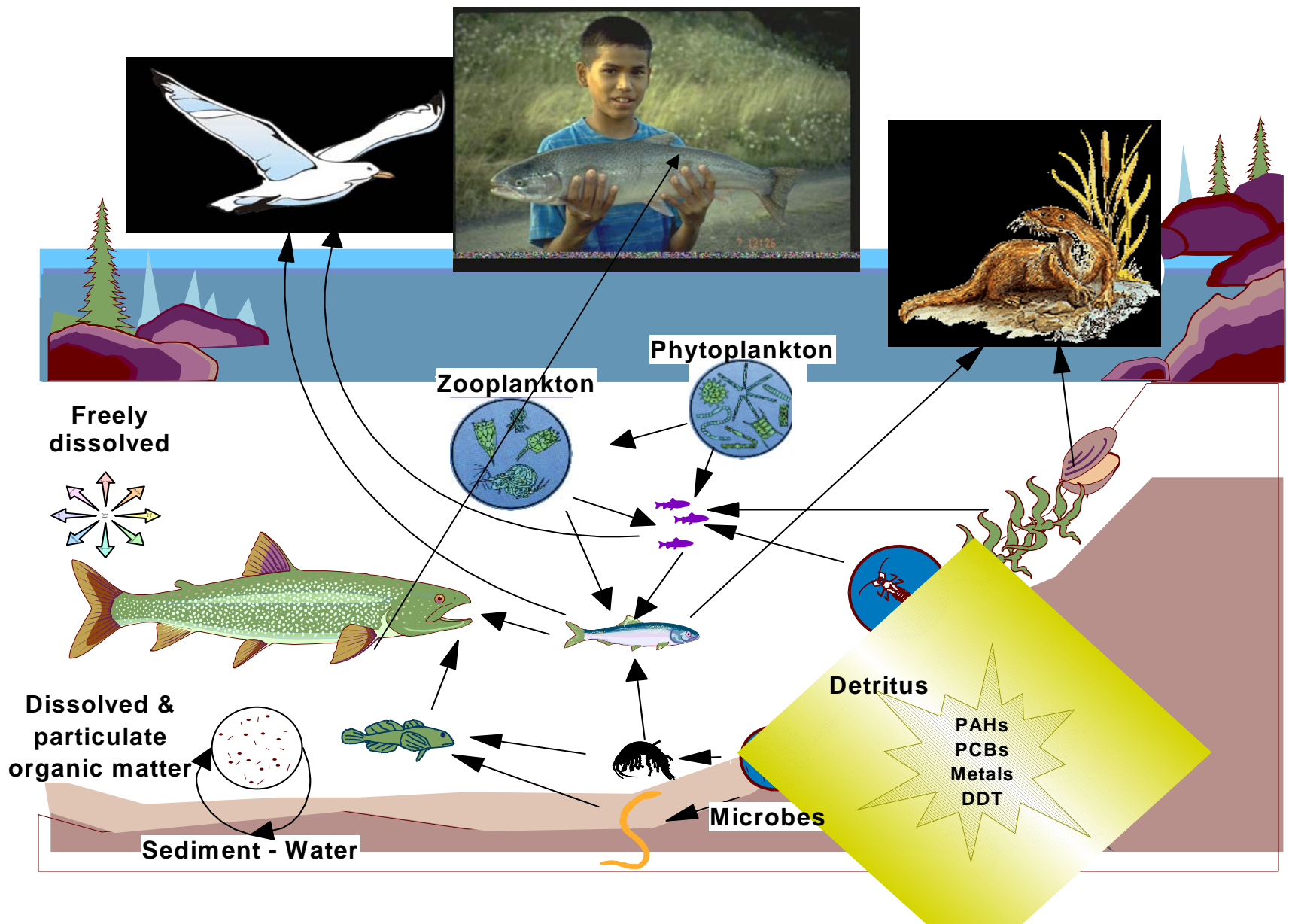


Contaminants

- Metals
- Pesticides
- PAHs
- Semi-volatile organics
- PCBs
- Herbicides
- Dioxins, Furans

Sediment

- Habitat for benthic organisms
- Contaminated sediments
 - Reservoir of contamination
 - Benthic organisms have direct contact
 - Exposure varies based on toxicity, organism
 - Bioaccumulation through food web



Gould and
McCormick and
Baxter were
previously listed
as Superfund
Sites.

McCormick –
construction
complete

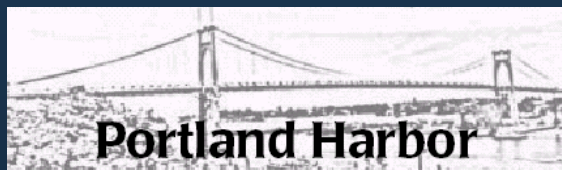
Gould – complete
deleted





NPL Site Listing

- Data met criteria for NPL listing
- Portland Harbor Site proposed for listing
- Public comment - Broad support for listing – trustees, tribes, environmental groups, public, Governor support
- Added to the NPL in December 2000.





2001

**AOC
MOU**

2002/2003

**Begin Round 1
Work Plan**

**ROUND 1
SAMPLING:**
•Fish Tissue
•Sediment
•Bathymetry

Summer 2004

**Approved Work
Plan and Field
Sampling Plan**

**ROUND 2A
SAMPLING:**
•Surface
•Subsurface
•Bioassays

Fall 2004

**Round 1 Site
Characterization
Report**

**ROUND 2A
SAMPLING:**
•Surface Water
•Groundwater pilot

Winter 2005

**Step 1 Hydro
Model
Report**

**ROUND 2A
SAMPLING:**
•High Flow
Surface Water

Spring 2007

Round 2 Report

**ROUND 3A
SAMPLING:**
•Sturgeon
•Storm Water

Fall 2006

**Framework
Issues**

**ROUND 3A
SAMPLING:**
•lamprey
•Up & downstream
•Surface Water

Fall 2005

**Food Web
Model Report**

**ROUND 2B
SAMPLING:**
•Benthic (clams)
•Groundwater

Summer 2005

**Round 2A
Data Report**

**ROUND 2B
SAMPLING:**
• Sediment
Cores
•Subyearling
Chinook

Summer/Fall 2007

**F&T Model
Report**

**ROUND 3B
SAMPLING:**
•Biota Tissue
•FS (N&E)
•Risk (bioassay)

2008

**Draft RI and
Baseline
Risk
Assessments**

2009

**Draft FS
Report**

2010

**Proposed
Plan and
Record of
Decision**

Portland Harbor Remedial Investigation and Feasibility Study

Memorandum of Understanding

- EPA
- DEQ
- US Fish and Wildlife Service
- Oregon Department of Fish and Wildlife
- National Oceanic and Atmospheric Administration

Six tribes:

- Siletz
- Grand Ronde
- Warm Springs
- Nez Perce
- Yakama
- Umatilla

Site Management

MOU specified:

- EPA will direct in-water investigations
- DEQ will direct uplands investigations
- State and federal natural resource agencies and six tribal governments will actively participate in technical work.

Natural Resource Trustee Agencies

- NOAA, US Fish & Wildlife, State Fish & Wildlife, DEQ
- Separate funding for NRDA
- Goal is to seek opportunities for restoration concurrent with CERCLA activities
- ESA coordination

Tribal Governments Involved in Portland Harbor Process



- The Confederated Tribes of the Grand Ronde Community of Oregon



- The Confederated Tribes of Siletz Indians of Oregon



- The Confederated Tribes of the Umatilla Indian Reservation



- The Confederated Tribes of the Warm Springs Reservation of Oregon



- The Confederated Tribes and Bands of the Yakama Indian Nation



- The Nez Perce Tribe

General Tribal Issues

- Protect Indian treaty fishing rights
- Uphold federal obligations
- Protect rights as natural resource trustees
- Protect cultural resources
- Salmon, sturgeon & lamprey



Negotiations

- General notice letters sent to 69 Potentially Responsible Parties (PRP's)
- To conduct Remedial Investigation and Feasibility Study
- Negotiations began in late January 2001





Administrative Order On Consent

Ten potentially responsible parties, the “Lower Willamette Group” signed Order with EPA to conduct investigation

- City of Portland
- Atofina (Arkema)
- ConocoPhillips
- Northwest Natural
- Chevron
- Port of Portland
- Gunderson
- Time Oil
- Union Pacific Railroad
- Oregon Steel



Remedial Investigation / Feasibility Study

- Characterize site conditions
- Determine the nature/extent of contamination
- Assess the risk to human health and the environment
- Develop, screen, and evaluate alternative cleanup actions

PA/SI

HRS

NPL
Listing

RI
Remedial
Investigation

FS
Feasibility
Study

Proposed
Plan

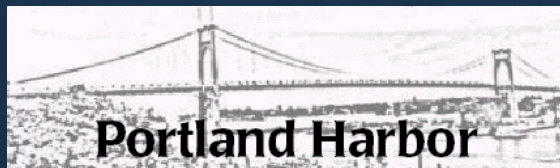
ROD
Record Of
Decision

RD
Remedial
Design

RA
Remedial
Action

O & M
Operation and
Maintenance

Deletion
From NPL



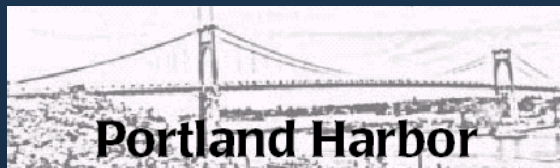


Project Goals

(included in Statement of Work)

Survival growth and reproduction of:

- Benthic organisms
- Fish and Wildlife
- Humans, including sensitive and subsistence populations.
- Endangered Species under ESA



ATSDR

Preliminary Health Assessment

- Draft report released in January 2002
- Recommended fish sampling
- Recommended investigation of fish consumption

Resident Species



Small mouth bass



Black crappie



Crayfish



Common carp



Bullhead catfish

Additional Study of non-resident species:

- Oregon Department of Human Services
- Oregon Department of Fish & Wildlife
- Agency for Toxic Substances & Disease Registry
- EPA Region 10
- City of Portland



Summary

- Metals detected in fish are relatively low
- Some fish have high organic contamination loads~



>



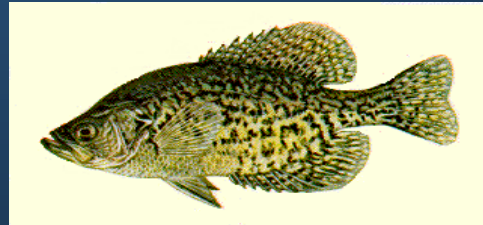
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- Other fish have lower organic contamination loads~



<



DHS issued advisory for Portland Harbor area of lower Willamette June 2004 for resident fish

Based on results showing elevated PCBs

Area between Sauvie Island and Freemont Bridge

Women of childbearing age, children – avoid eating resident fish (carp, bass, catfish)

Others – no more than 8 ounce meal/month

There is also an advisory in effect for mainstem of the Willamette River based on PCBs mercury and pesticides



OREGON FISH ADVISORY

Fish from these waters may be harmful to eat, especially for children and pregnant or nursing women.

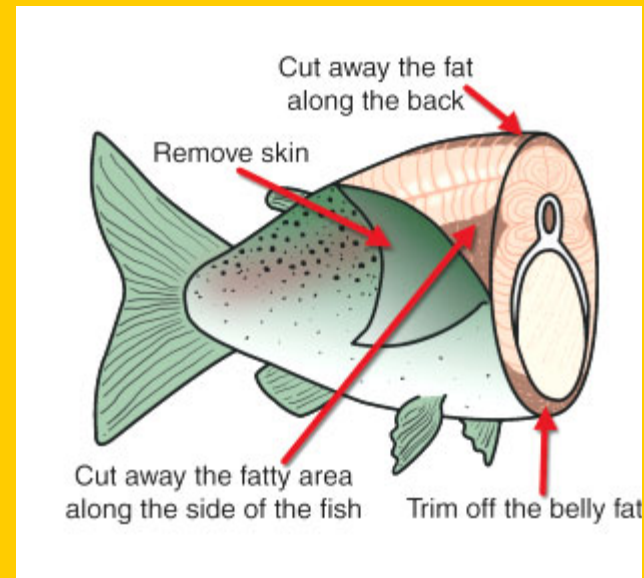


Atención: Los peces de estas aguas pueden ser dañinos al comerlos, especialmente a mujeres embarazadas, mujeres que están lactando (amamantando) y a niños.

Chú ý: Ăn cá từ những vùng nước này có thể sinh nguy hại, nhất là cho trẻ em, phụ-nữ đang mang thai hoặc cho con bú.

注意：食用這些水域的魚類，可能會使健康受損，尤其對兒童、懷孕婦女、或正在用母乳哺乳的母親影響更大。

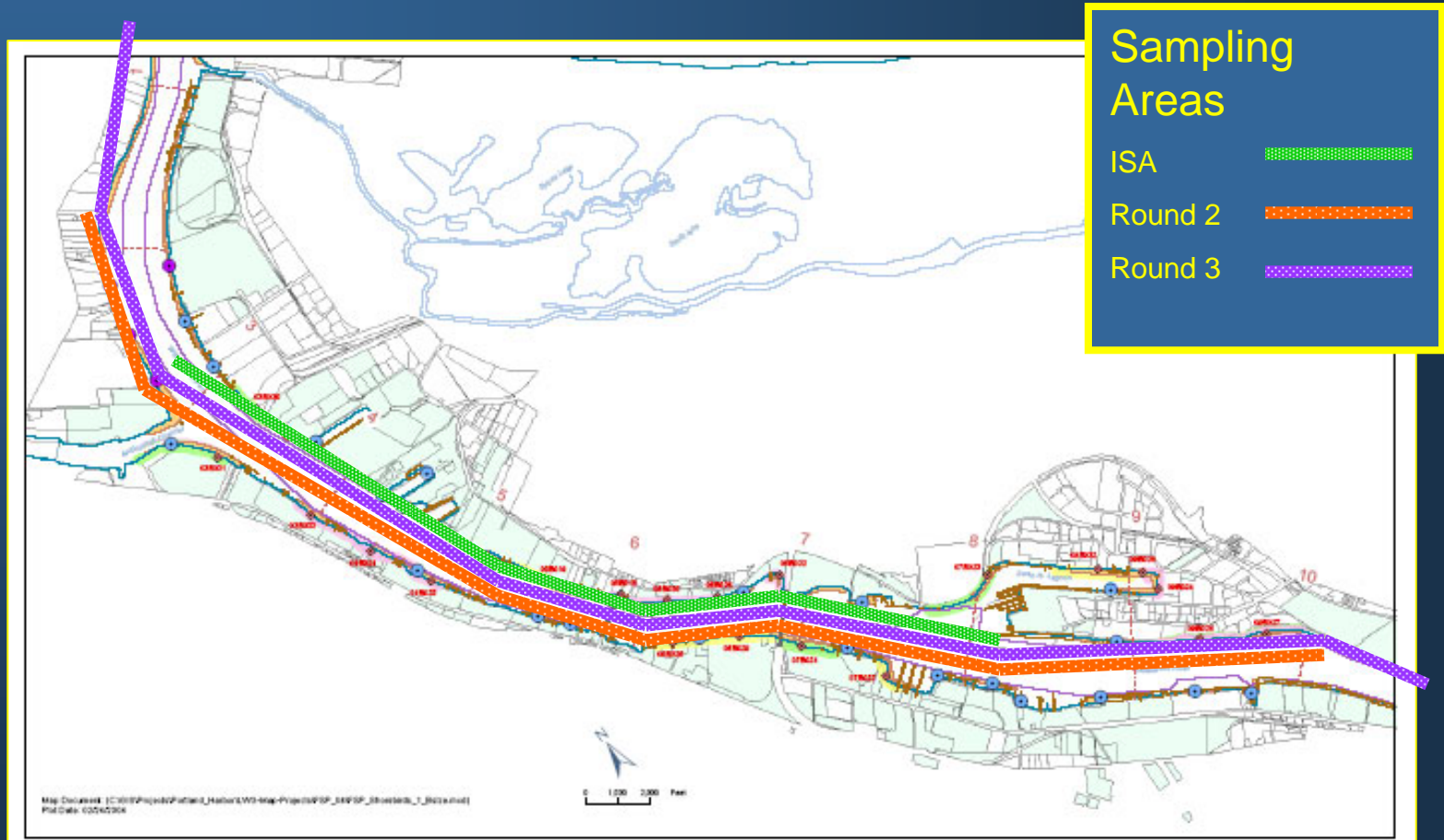
Внимание: Рыба из этой воды может быть вредной для употребления, особенно для детей, беременных и кормящих женщин



AVOID **Evite comer** **Tránh** **避免** **ИЗБЕГАЙТЕ**



Portland Harbor Sampling Areas



Round 2 Sampling Area

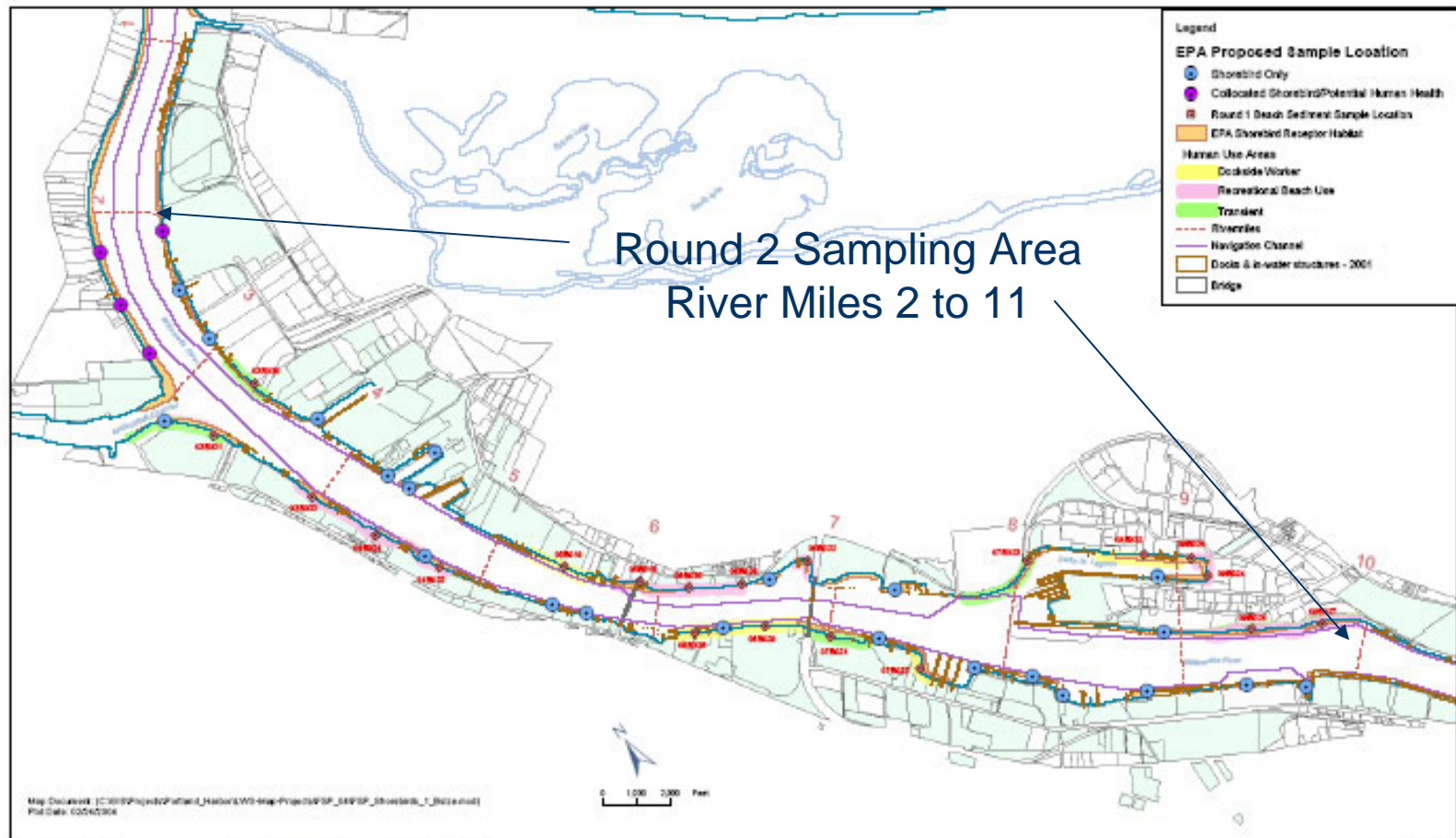
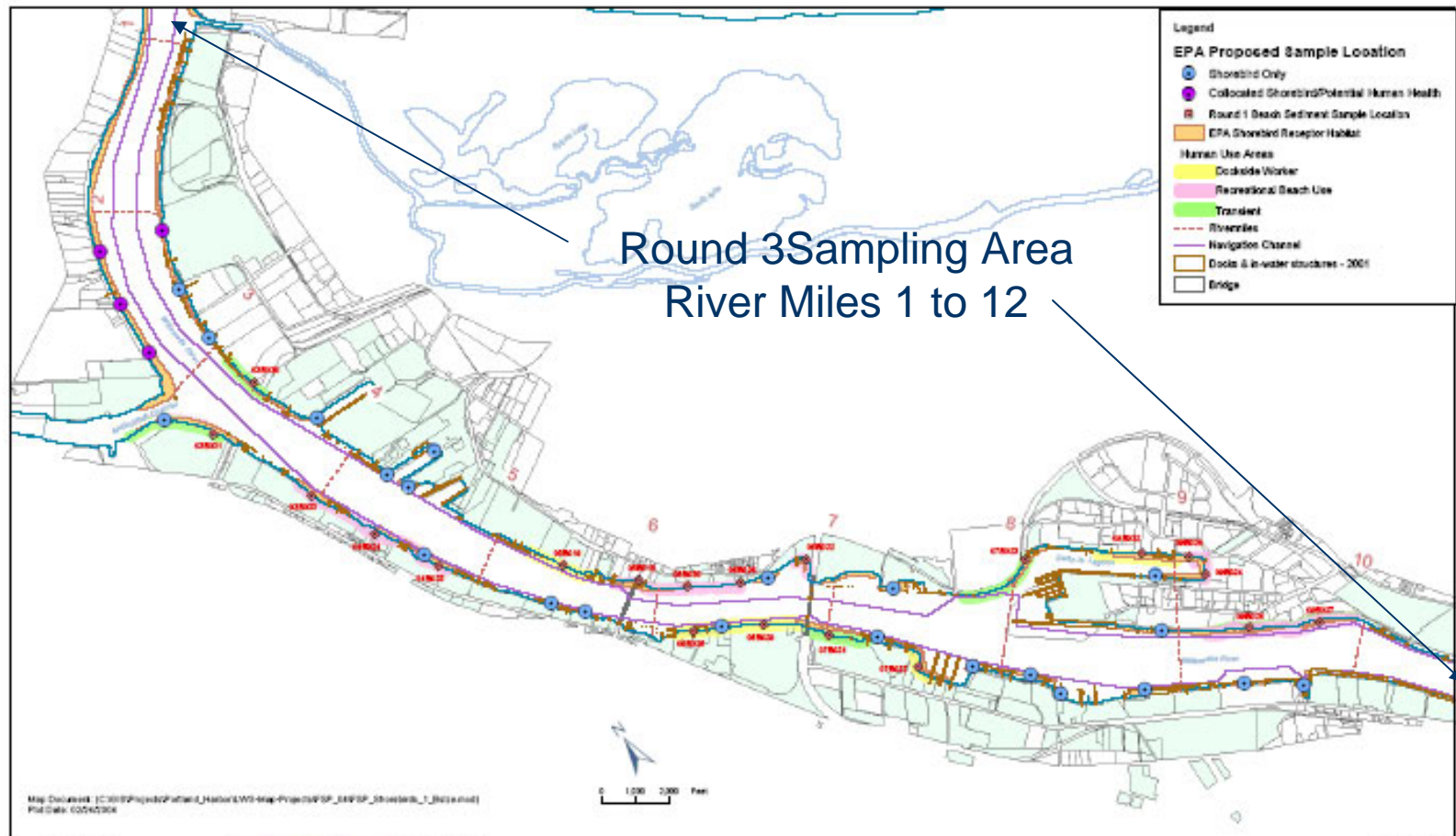


Figure 2-1
Portland Harbor RIF3
Round 2 Field Sampling Plan Addendum
Shore and Beach Sediment Sample Locations

Round 3 Sampling Area



LWG
LAWYER WORKERS GROUP
integral



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Figure 2-1
Portland Harbor RIF3
Round 2 Field Sampling Plan Addendum
Shore and Beach Sediment Sample Locations

Challenges

- Bottom of Willamette watershed
- Dynamic river environment
- Working harbor, federal navigation channel
- Multiple sources and contaminants
- No sediment cleanup standards
- ESA species

Community Involvement

- Community Involvement Plan Feb 2002 - later updated
- Fact sheet/site updates - 900 on mailing list
- Community Advisory Group
- TAG Grantee - Willamette Riverkeeper (supplemental funding)